BoxInterferences@uspto.gov
571-272-4683

Paper 077
Filed: September 19, 2012

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(U.S. Pat. No. 5,752,011)[1]

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)[2]

Patent Interference No. 105,801 (JL)
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Judgment – Merits – Bd. R. 127

---

[1] U.S. Pat. No. 5,752,011 is based on patent application 08/262,754, filed June 20, 1994. Paper 1. The real party in interest is IpVenture, Inc. Paper 14.

[2] Filed June 19, 2003. Patent application 10/464,482 was accorded the benefit of patent application 08/124,980, filed September 21, 1993. Paper 1. The real party in interest is Intel Corp. Paper 6.

In a concurrent paper, Thomas's Motion 1 (Paper 36) seeking to designate claims 1-5, 8-24, and 29-32 of U.S. Pat. No. 5,752,011 as not corresponding to the count has been denied. There are no other pending motions in this interference. Thomas also indicated that as the junior party, it would not be filing a priority motion. Paper 31 at 2, 8. As such, Thomas concedes priority with respect to any claim left as corresponding to the count after consideration of Thomas's motion to designate claims as not corresponding to the count. *Id.* Accordingly, because Thomas's Motion 1 has been denied and all of Thomas's involved claims correspond to the count, it is now appropriate to enter judgment against junior party Thomas.

It is **ORDERED** that judgment with respect to Count 1 is entered against junior party C. DOUGLASS THOMAS and ALAN E. THOMAS.

It is **FURTHER ORDERED** that claims 1-32 of junior party's involved U.S. Pat. No. 5,752,011, which correspond to Count 1, are cancelled.

It is **FURTHER ORDERED** that the parties shall note the requirements of 35 U.S.C. § 135(c) and Bd. R. 205.

It is **FURTHER ORDERED** that a copy of this judgment shall be entered into the files of U.S. Pat. No. 5,752,011 and patent application 10/464,482.

By Electronic Transmission:

Counsel for Thomas:

Richard A. Neifeld, Esq.
Robert W. Hahl, Esq.
Neifeld IP Law, PC
rneifeld@neifeld.com
rhahl@neifeld.com

Counsel for Pippin:

R. Danny Huntington, Esq.
William N. Hughet, Esq.
Rothwell, Figg, Ernst & Manbeck, PC
dhuntington@rothwellfigg.com
whughet@rothwellfigg.com

BoxInterferences@uspto.gov
571-272-4683

Paper 76
Filed: September 19, 2012

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

C. DOUGLASS **THOMAS** and ALAN E. THOMAS
Junior Party
(Patent No. 5,752,011)

v.

JACK D. **PIPPIN**
Senior Party
(Application 10/464,482)

Patent Interference No. 105,801
(Technology Center 2100)

Before JAMESON LEE, MICHAEL R. ZECHER, and JUSTIN T. ARBES, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

Decision – Motions – Bd. R. 125(a)

This interference was declared on April 11, 2011. The sole pending motion is Thomas's Motion 1, which seeks to designate claims 1-5, 8-24, and 29-32 of Thomas's involved Patent 5,752,011 ("Thomas '011") as not corresponding to the count. Pippin opposes Thomas's Motion 1. Because Thomas fails to demonstrate by a preponderance of the evidence that claims 1-5, 8-24, and 29-32 of Thomas

‘011 should be designated as not corresponding to the count, Thomas’s Motion 1 is *denied*.

PROCEDURAL HISTORY

The parties’ initial requests for authorization to file various motions were resolved in an Order dated June 16, 2011. Paper 31. Thomas requested authorization to file a motion to designate its involved claims as not corresponding to the count, citing 113 allegedly distinguishing features of its involved claims. Paper 26. Thomas was ordered to limit its list to a reasonable number of limitations and authorized to file a motion to designate its involved claims as not corresponding to the count only on the basis of numbered features 1, 6, 17, 31, 39, 40, and 97 in Thomas’s list. Paper 31 at 7. The Order specifically noted that the motion “must account for not just the count as prior art, or just the prior art references of record in either party’s involved cases, but also any prior art otherwise known to party Thomas as well as the level of ordinary skill in the art.” Paper 31 at 7-8. The Order also required Thomas to set forth the closest prior art feature known to Thomas and the closest known feature within the level of ordinary skill in the art, giving specific examples of what should be provided for features 1 and 6. Paper 31 at 8.

In addition, Thomas was authorized to file: (1) a motion alleging unpatentability of Pippin’s claim 34 under 35 U.S.C. § 112, first paragraph, as lacking enabling disclosure; and (2) a motion alleging unpatentability of Pippin’s claim 34 under 35 U.S.C. § 103 as obvious over two prior art references. Paper 31 at 3-6. All other requests for motions by the parties were either

dismissed or denied. Paper 31 at 2-8. Thomas subsequently stated that it would not be filing the two motions regarding unpatentability and would only be filing a motion to designate its involved claims as not corresponding to the count. Paper 34. Thomas also indicated that as the junior party, it would not be filing a preliminary statement or priority motion. Paper 31 at 2, 8. Thus, Thomas's Motion 1 is the only pending motion in this interference.

FINDINGS OF FACT

The following findings of fact are supported by a preponderance of evidence.

1. Junior party Thomas is involved in this interference on the basis of Patent 5,752,011.
2. Senior party Pippin is involved in this interference on the basis of Application 10/464,482, filed June 19, 2003.
3. Thomas's real party in interest is IpVenture, Inc. Paper 14.
4. Pippin's real party in interest is Intel Corporation. Paper 4.
5. The sole count in this interference is Count 1, which is defined as (Paper 23):

   Claim 34 of Pippin's Application 10/464,482

6. Claim 34 of Pippin's Application 10/464,482 reads as follows:

   34. A computer system comprising:

   an active cooling device;

   a microprocessor comprising:

   a register storing a register value corresponding to a

threshold temperature;

a programmable thermal sensor receiving the register value, wherein the programmable thermal sensor generates a first interrupt signal if a microprocessor temperature exceeds the threshold temperature,

wherein the active cooling device is activated in response to the interrupt signal, and

wherein the active cooling device comprises a fan; and

clock circuitry for providing a clock signal for the microprocessor,

wherein a frequency of the clock signal is reduced in response to the first interrupt signal.

Thomas '011

7. Thomas '011 discloses that "[t]he second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed." Col. 5, ll. 40-42.

Sheets (Patent 4,670,837)

8. Sheets discloses determining the current rate of required microprocessor activity and varying the clock frequency of the microprocessor based on that rate. Abstract; col. 1, ll. 45-54; col. 3, ll. 18-21.

9. As described in Sheets, the "present invention is directed to reducing the amount of energy drawn by system 100 from . . . a [Direct Current] DC source," such as a battery. Col. 2, ll. 37-43.

10. Sheets discloses: "[Voltage-controlled oscillator] (VCO) 102 gradually adjusts the frequency of the clock signal transmitted to microprocessor 101 to the computed frequency in response to the digital word. Reducing the clock frequency reduces the power consumed by microprocessor 101 and, by reducing the required access rate to the associated devices, i.e., ROM 107, RAM 108, and I/O port 109, also reduces the power consumed by those devices. The power reduction is substantially directly proportional to the reduction of the clock frequency. For example, a frequency reduction from 20 megahertz to 10 megahertz will result in a saving of approximately 50%." Col. 2, l. 65-col. 3, l. 8.

Georgiou (Patent 5,189,314)

11. Georgiou discloses detecting processor activity and varying the clock frequency of the processor based on that activity. Abstract; col. 2, ll. 10-20, 40-41.

12. As described in Georgiou, "[i]n accordance with this invention, heat production is controlled in accordance with needs through changes in clock rate (i.e., by slowing down the clock rate when a circuit is idling), in order to make it possible to speed up the clock rate when performing either special critical work or useful work in general." Col. 2, ll. 10-16.

13. Georgiou discloses that "[w]hen a circuit is switched to a lower clock rate, there is a heat generation savings. Given a certain heat dissipation capacity (based on the characteristics of the chip and package), it is possible to switch the clock to a higher rate, if enough heat savings have been

accumulated." Col. 2, ll. 20-25; col. 3, ll. 33-38.

14. Georgiou discloses "us[ing] a clocking rate for a chip which is higher than the maximum clocking rate specified for the chip." Col. 2, ll. 1-3. According to Georgiou, "[t]he performance of the chip is improved by changing the clock to a higher rate than normally allowed." Col. 2, ll. 29-30.

15. When useful work is being done and the value of the up-down heat counter is high enough, Georgiou discloses that it becomes beneficial to operate the chip at a higher clock rate in order to improve speed performance. Col. 3, ll. 33-38.

Swamy (Patent 5,623,594)

16. Swamy discloses an "overtemperature detection circuit" that takes "periodic readings" of a processor's operating temperature to determine whether the temperature exceeds a "predetermined maximum allowed temperature." Col. 7, ll. 10-28; col. 2, ll. 30-40.

17. Swamy discloses sending a signal to various components to attempt to cool the processor if the predetermined temperature is exceeded. "For example, the signal may instruct the fan 240 to turn on or increase speed if already on. Alternatively, the signal may send a message to the user through the video subsystem 280, or it may instruct the [Central Processing Unit] CPU clock 250 to decrease the operational speed of the CPU 260. As a last resort, the signal may instruct the CPU 260 to save the document presently being worked on to the disk 320 and turn the power to the [Personal

Computer] PC off." Col. 7, ll. 34-41; col. 2, ll. 40-51.

18. Swamy discloses that "[t]he component to which the signal is sent may depend on how extreme the temperature of the CPU 260 has become and how long the temperature has been at the excessive level." Col. 7, ll. 30-33.

19. Swamy discloses that the signals sent in an attempt to cool the processor "can be programed to occur in several different combinations." Col. 6, l. 64-col. 7, l. 1.

Neal (Patent 5,483,102)

20. Neal discloses the thermal management of a semiconductor device and, in particular, reducing an internal clock frequency of the semiconductor device upon receiving a first signal indicating fan failure and/or a second signal indicating thermal overload. Col. 1, ll. 9-14.

21. Neal discloses that fans for cooling semiconductor devices commonly employ a chip set to generate a motor pulse at a given frequency to drive a fan motor. Col. 5, ll. 31-33. By altering the frequency of the motor pulse, Neal discloses that the fan is driven at various speeds, thereby increasing or decreasing the fan's airflow production. Col. 5, ll. 33-36.

Dinh (Patent 5,526,289)

22. Dinh discloses a fan cooling subsystem for a personal computer wherein the speed of the fan is adjustable based on the temperature within the housing of the personal computer. Col. 1, ll. 10-13.

23. Dinh discloses that it may be desirable to have two speeds for a fan: (1) when the computer's elements are operating at a low temperature, the fan blows quietly at a low speed; and (2) when the computer's elements are hot, the fan blows rapidly and loudly at a high speed. Col. 1, ll. 29-35.

24. Dinh discloses that "there is a need for a fan subsystem which can increase the fan speed proportionally to the increase in the temperature of the computer's elements. Such a fan subsystem would evenly match the temperature inside the computer with the fan speed necessary to cool the system. Thus, a computer system with such a fan subsystem would provide the most efficient trade off between fan speed and sound quality." Col. 1, ll. 44-51.

ANALYSIS

Thomas's Motion 1 seeks to designate claims 1-5, 8-24, and 29-32 of Thomas '011 as not corresponding to the count. Thomas as the moving party bears the burden of proof to establish entitlement to the relief requested. 37 C.F.R. § 41.121(b). A claim corresponds to a count if the subject matter of the count, treated as prior art to the claim, would have anticipated or rendered obvious the subject matter of the claim. 37 C.F.R. § 41.207(b)(2). Thus, unlike other situations, such as a civil action for patent infringement where the moving defendant asserts that the claimed subject matter is anticipated or obvious, Thomas as the moving party bears the burden of establishing a negative, i.e., that the subject matter of the claims is *not* anticipated or obvious in light of the count and any other applicable prior art.

It is evident that the count, if treated as prior art, would not have anticipated any of the claims which Thomas seeks to designate as not corresponding to the count. Thus, the proper analysis is one of obviousness per *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). The pertinent factual inquiries are: (1) the scope and content of the prior art, (2) the differences between the claimed invention and the prior art, (3) the level of ordinary skill in the art, and (4) any objective evidence of nonobviousness. *Id.* at 17. The obviousness conclusion is reached from the perspective of the hypothetical person having ordinary skill in the art who is presumed to be aware of all pertinent prior art. *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985). Also, a person of ordinary skill in the art has ordinary creativity and is not an automaton. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id.* at 417.

To prevail in its motion, Thomas must demonstrate by a preponderance of the evidence that each of the claims it seeks to designate as not corresponding to the count would not have been obvious to one of ordinary skill in the art, given the subject matter of the count as prior art and any other applicable prior art. Thomas in its motion identifies a number of features in its claims that allegedly distinguish the count and other prior art, and groups the involved claims accordingly. We address each group of claims in turn.

For all of the reasons discussed below, Thomas has not satisfied its burden

of proof that the collective differences between each claim it seeks to designate as not corresponding to the count and the subject matter of the count are such that the claim would not have been obvious over the count and other applicable prior art.

Features 6 and 38 – Varying Clock Frequency Based on Processor Activity and Temperature

Thomas argues that claims 1-5, 8-24, and 29-32 of Thomas '011 recite the feature of varying clock frequency based on both processor activity and temperature (features 6 and 38). For example, claim 8 of Thomas '011 recites a temperature sensor, activity detector, and clock unit where the clock unit produces a "clock having a frequency that varies in accordance with both the activity and the chip temperature of the microprocessor." Thomas contends that the involved claims would not have been obvious over the count and other prior art based on this feature.

The count discloses varying clock frequency based on temperature, not processor activity. Thomas, however, admits in the background section of its involved patent that clock frequency variation based on processor activity was known at the time. *See, e.g.*, Thomas '011, col. 1, ll. 15-24 ("It is also known to suspend or slow a computer's processor (e.g., microprocessor, CPU) when the processor is not actively processing. . . . [In one exemplary reference,] the sleep mode either stops the clock or slows it to 4 MHz."); Paper 47 at 14 (admitted facts 63-64). Thus, clock frequency variation based on processor activity and based on temperature were both old and well known individually in the prior art.

The issue before us is whether the claims reciting the combined feature of varying clock frequency based on processor activity *and* temperature would have been obvious to one of ordinary skill in the art given the count itself and any other applicable prior art.

Thomas points to testimony from its expert, Dr. Douglas P. McNutt, identifying Nakagawa (Japanese Patent Application 1990-83720, Exhibit 2010) as "the closest prior art with respect to the feature of frequency reduction," and Kenny (Patent 5,287,292) as "the closest prior art known with respect to the feature of activity monitoring." Paper 36 at 13-15. We disagree that Nakagawa and Kenny are the closest prior art references for purposes of feature 6/38. Indeed, Thomas admits that "[t]here is no activity detector in Nakagawa." Paper 36 at 13. Nakagawa therefore cannot be the closest prior art for claims including the feature of varying clock frequency based on processor activity and temperature.

The prior art references cited by Pippin – Sheets and Georgiou – are more relevant to the involved claims reciting feature 6/38, and reflect the level of ordinary skill in the art at the time. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (agreeing with the Board's conclusion that "the level of ordinary skill in the art . . . was best determined by appeal to the references of record"). Sheets discloses detecting processor activity and reducing clock frequency in times of low activity. Sheets, col. 1, ll. 45-54 ("determining the processing load presented to the system and then reducing the clock frequency at which the system is driven, during times when the processing load is reduced"). By doing so, Sheets reduces the consumption of power from a battery. Sheets, col. 2, ll. 37-

43; col. 2, l. 65-col. 3, l. 8 ("[r]educing the clock frequency reduces the power consumed by microprocessor 101"). As Pippin points out, this is the same reason given in Thomas's involved patent for varying clock frequency based on processor activity. *See* Paper 44 at 11; Thomas '011, col. 5, ll. 40-42 ("The second embodiment is particularly advantageous for portable computing devices because it conserves battery life by using a sleep clock when no processing is needed."). Georgiou similarly discloses reducing clock frequency in times of low activity to reduce heat generation, and increasing clock frequency "if enough heat savings have been accumulated." Georgiou, Abstract; col. 2, ll. 8-28; col. 3, ll. 33-38. Sheets and Georgiou therefore teach varying clock frequency based on processor activity to (1) conserve battery life, and (2) reduce heat generation in times of low activity and increase performance speed when possible. Dr. McNutt admitted that clock frequency variation was known to achieve both benefits. *See* Paper 44 at 9-10.

Thomas has not presented sufficient and credible evidence that a person of ordinary skill in the art would not have found it obvious, in light of the count and the other prior art discussed above, to vary clock frequency based on both processor activity and temperature. Combining the known feature of clock frequency variation based on processor activity (as described in Sheets and Georgiou) with the known feature of clock frequency variation based on temperature (as described in the count) to arrive at the subject matter of the involved claims would have been a simple combination of familiar elements that yields predictable results. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to conserve battery life, reduce heat

generation, and improve performance speed as taught by Sheets and Georgiou. Further, we see no reason why varying clock frequency based on both factors would have been uniquely challenging or otherwise beyond the level of skill of an ordinarily skilled artisan. *See id.* at 421 (an improved product in the art is obvious if that "product [is] not [one] of innovation but of ordinary skill and common sense"); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161-62 (Fed. Cir. 2007). One with ordinary skill in the art is a person of ordinary creativity, not an automaton. *KSR*, 550 U.S. at 421.

Further, Thomas's arguments regarding the scope of the prior art, including the count, are unpersuasive. Thomas argues that the computer system disclosed in the count is limited in various respects such that it would not have been obvious to a person of ordinary skill to combine it with prior art disclosing activity detection and clock frequency variation based on processor activity. Paper 36 at 6-15; Paper 47 at 3-4. For instance, Thomas contends that based on the description in Pippin's specification, the "programmable" thermal sensor of the count functions like an on-off switch in outputting a single "interrupt signal" if the temperature exceeds a threshold, whereas the "temperature sensor" recited in Thomas's involved claims is capable of *measuring* temperature and performing actions based on that *measured* temperature. Paper 36 at 7, 10-11; Paper 47 at 3-4. We disagree that the scope of what the count would have suggested to a person of ordinary skill in the art is so limited, as it is the count itself rather than Pippin's specification that is deemed prior art for purposes of our analysis. A person of ordinary skill in the art also is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418. Further, even assuming that

the count's thermal sensor is limited in the manner argued by Thomas, Thomas has not adequately explained why the alleged limitations would prevent a skilled artisan from using his or her ordinary skill to combine it with other prior art. *See In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) ("[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.").

As to Sheets specifically, Thomas argues that the reference is cumulative and was considered during prosecution of Thomas '011. Paper 47 at 5. We disagree that the reference is cumulative to other references discussed herein. Also, whether the Examiner had considered the reference during prosecution of Thomas '011 does not change our view with respect to its disclosure. The reference, like Georgiou, is indicative of the level of ordinary skill in the art at the time. Thomas further argues that Georgiou's disclosure regarding reducing clock frequency when processor activity is low (e.g., when the processor is "idle") would not have suggested Thomas's involved claims directed to protecting a computer "in danger of overheating." Paper 47 at 5. We do not see, and Thomas has not pointed us to, any limitation in the claims requiring a specific, particularly heavy burden on the processor, or any reason why the claims would not cover varying clock frequency based on a certain lower activity rate.

Thomas has not met its burden to demonstrate by a preponderance of the

evidence that the involved claims reciting the feature of varying clock frequency based on both processor activity and temperature would not have been obvious in light of the count and the other applicable prior art discussed above.

Feature 17 – Fan Speed Dependent on Temperature

Claim 18 of Thomas '011 recites "a speed control signal for a fan with the speed being dependent on the chip temperature." Thomas argues that claim 18 would not have been obvious over the count and other prior art based on the feature of fan speed dependent on temperature.

We first note that the count recites a fan that is activated in response to an interrupt signal generated when the microprocessor temperature exceeds a threshold temperature. Thus, the issue before us is whether claim 18 of Thomas '011 (the sole involved claim reciting feature 17), which recites *speed control* for the fan and speed control *dependent on chip temperature*, would have been obvious to one of ordinary skill in the art given the count itself, which discloses a fan in general, and any other applicable prior art.

Thomas argues that the computer system of the count uses a single threshold temperature to generate a single interrupt signal that turns on the fan. Paper 36 at 16-17. According to Thomas, because the interrupt signal does not convey a temperature value (only that the threshold temperature has been reached), the count's computer system cannot implement fan speed control dependent on chip temperature. Paper 36 at 16-17. The question is not, however, what the count in isolation teaches, but rather whether the involved claim would have been obvious given the count and any other applicable prior art. As

explained below, fan speed control dependent on chip temperature was well known in the art and a person of ordinary skill would have been able to and would have had reason to incorporate the feature into the count's system.

The prior art references cited by Pippen – Dinh and Swamy – are relevant to the involved claim reciting feature 17. Paper 44 at 19-20. Dinh discloses that the speed of a fan is adjustable based on the temperature within the housing of a personal computer. Dinh, col. 1, ll. 10-13. In particular, Dinh discloses that it is desirable to have two fan speeds – low and high. Dinh, col. 1, ll. 29-35. To provide an efficient tradeoff between fan speed and noise, Dinh increases the fan speed "proportionally to the increase in the temperature." Dinh, col. 1, ll. 44-51. Swamy also discloses repeatedly measuring the temperature of a central processing unit and increasing the fan speed to cool the processor if the temperature remains high. Swamy, col. 7, ll. 34-41 ("For example, the signal may instruct the fan 240 to turn on or increase speed if already on."); col. 2, ll. 40-49. In addition, Dr. McNutt agreed that it was known to use variable speed fans for cooling microprocessors. Paper 47 at 22 (admitted fact 115).

Thomas has not presented sufficient and credible evidence demonstrating that in light of the count and other prior art discussed above, the involved claim reciting the feature of fan speed dependent on temperature would not have been obvious to a person of ordinary skill in the art. A person of ordinary skill in the art would have known based on Dinh and Swamy to operate the fan at multiple speeds and to have the fan speed depend on chip temperature, and would have appreciated incorporating these known features into the count's computer system

to arrive at the involved claim.[1] Doing so would have been a simple and common sense modification yielding predictable results and within the level of skill of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 416. A person of ordinary skill also would have had reason to do so to achieve an optimal tradeoff between fan speed and noise and to counter persistent high temperature conditions, as taught by Dinh and Swamy.

Further, Thomas's arguments regarding the prior art are not persuasive, particularly as Thomas fails to account for prior art like Swamy, which takes periodic measurements of processor temperature and increases fan speed based on the changing temperature. Swamy, col. 7, ll. 10-60. Thomas also points to testimony from Dr. McNutt identifying Neal as the alleged "closest" prior art regarding fan speed control, arguing that because Neal's fan is always on unless it fails, Neal does not really teach "fan speed control." Paper 36 at 17-18. Neal, however, discloses using the frequency of a motor pulse to drive the various speeds of a fan, thereby increasing or decreasing airflow production (Neal, col. 5, ll. 31-36); it therefore teaches a fan with multiple speeds of operation and fan speed control. A person of ordinary skill in the art would have appreciated incorporating the known element of fan speed control from Neal into the count's

---

[1] Pippin argues that claim 18 of Thomas '011 would be anticipated by the count because it "activate[s]" a fan in response to a temperature signal (i.e., goes from a speed of zero to a speed above zero). Paper 44 at 17-18. Claim 18, however, recites "producing a speed control signal for a fan with the speed being dependent on the chip temperature." A person of ordinary skill in the art would not understand a "speed control signal for a fan" to encompass controlling a speed of zero; rather, the speed control signal controls the speed of an operating fan. Thus, we do not agree that claim 18 is anticipated by the count.

computer system, and further would have appreciated incorporating speed control dependent on chip temperature as taught by Dinh and Swamy, for the reasons explained above.

Thomas has not met its burden to demonstrate by a preponderance of the evidence that claim 18 of Thomas '011 reciting the feature of fan speed dependent on temperature would not have been obvious in light of the count and other applicable prior art.

Feature 40 – Clock Has an Overdrive Frequency

Thomas argues that claims 21 and 31 of Thomas '011 include the feature of a clock that has an overdrive frequency. Paper 36 at 18. For example, both claims recite that "the clock signal has an overdrive clock frequency when certain activity is present and the chip temperature is below a predetermined temperature." Thomas contends that claims 21 and 31 of Thomas '011 would not have been obvious over the count and any other applicable prior art based on this feature. Paper 36 at 18-19.

At the outset, we note that the count recites "clock circuitry for providing a clock signal for the microprocessor." As such, the count discloses a clock, but does not disclose that the clock has an overdrive frequency. Therefore, the issue before us is whether Thomas demonstrates by a preponderance of the evidence that the involved claims, which include feature 40 – a clock that has an overdrive frequency – would not have been obvious in light of the clock recited in the count in combination with any other applicable prior art. With this in mind, we turn to the merits of Thomas's arguments.

Thomas argues that the count does not disclose a method that employs an overdrive clock. Paper 36 at 19. According to Thomas, Pippen's specification discloses how to reduce or halt the normal clock frequency, but does not disclose frequencies that exceed the normal clock frequency. *Id.* As such, Thomas contends that the Pippen application does not suggest an overdrive clock, nor does it suggest any ability to invoke the overdrive clock "when certain activity is present and the chip temperature is below a predetermined threshold," as recited in claims 21 and 31. Paper 36 at 19 (citing Ex. 2001 ¶ 105). Thomas's argument that Pippen's specification does not disclose a clock that has an overdrive frequency is misplaced. Pippen's specification is not prior art for purposes of Thomas's Motion 1. The pertinent prior art is the subject matter of the count and other applicable prior art. A person of ordinary skill in the art also is presumed to have skills apart from what a prior art reference explicitly says. *See KSR*, 550 U.S. at 418.

Next, Thomas directs us to testimony from Dr. McNutt indicating that he is not aware of any prior art or the ordinary skill in the art that would have made the use of an overdrive clock obvious as disclosed in claims 21 and 31 when the invention was made. Paper 36 at 19 (citing Ex. 2001 ¶ 104). But there are pertinent prior art references with respect to feature 40. The prior art reference cited by Pippen – Georgiou – is relevant to claims 21 and 31 of Thomas '011, which include feature 40. Georgiou discloses increasing the rate of a clock for a chip to a higher rate than normally allowed or even beyond a maximum specified for the chip. Georgiou, col. 2, ll. 1-3, 29-30. As such, Georgiou teaches a clock with a clock frequency that is higher than normally allowed – otherwise

considered an overdrive clock.

A person of ordinary skill in the art would have appreciated modifying the clock recited in the count to include Georgiou's technique of increasing the clock frequency to a higher rate than normally allowed in order to arrive at the involved claims including feature 40. We conclude that this proffered combination would predictably result in a clock that has an overdrive frequency which provides the added benefit of improving the speed performance of the microprocessor recited in the count. *See* Georgiou, col. 3, ll. 33-38.

Further, we are not persuaded by Thomas's argument that Georgiou is incompatible with the device recited in the count because Georgiou's disclosure of counting up time spent in different activity states to estimate heat accumulation is in contrast to using a temperature sensor. Paper 47 at 7. Thomas's argument separately addresses the teachings of Georgiou and is insufficient to show that the count in combination with Georgiou does not render obvious the involved claims, which include feature 40. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Circ. 1986); *Keller*, 642 F.2d at 426. Nevertheless, Georgiou discloses that it becomes beneficial to operate the chip at a higher clock rate when useful work is being done (i.e., certain activity is present) and there are enough heat savings accumulated through the use of a minimal clock rate. Georgiou, col. 3, ll. 33-38. In particular, a person of ordinary skill in the art would have understood that Georgiou's disclosure of accumulating heating savings through the use of a minimal clock rate necessarily entails the chip operating at a lower temperature, such as a temperature that is below the threshold temperature recited in the count.

We conclude that a person of ordinarily skill in the art would have

appreciated modifying the clock recited in the count to include Georgiou's technique of increasing the clock frequency to a higher rate than normally allowed when certain activity is present and the chip temperature is below a threshold temperature in order to arrive at the involved claims including feature 40. Because Georgiou's technique was used to improve the speed performance of a chip (col. 1, ll. 6-14), and a person of ordinary skill in the art would have recognized that it would improve the speed performance of a microprocessor in the same way, modifying the count with Georgiou's technique would have been obvious unless its actual application is beyond his or her skill. *See KSR*, 550 U.S. at 417. Thomas has not provided any evidence that modifying the microprocessor recited in the count to include Georgiou's technique would have been uniquely challenging or otherwise beyond the level of skill of an ordinarily skilled artisan. *See Leapfrog*, 485 F.3d at 1161-62.

It follows that Thomas has not demonstrated by a preponderance of the evidence that claims 21 and 31 of Thomas '011, which include feature 40 – a clock that has an overdrive frequency – would not have been obvious in light of the clock recited in the count and Georgiou discussed *supra*.

CONCLUSION

For all of the foregoing reasons regarding the above-identified claim features, Thomas has not satisfied its burden of proof in showing that it is entitled to the relief requested, i.e., to have claims 1-5, 8-24, and 29-32 of Thomas '011 designated as not corresponding to the count.

Thomas's Motion 1 is *denied*.

Interference No. 105,801
Thomas v. Pippin

By Electronic Transmission:

Counsel for Thomas:

Richard A. Neifeld, Esq.
Robert W. Hahl, Esq.
Neifeld IP Law, PC
rneifeld@neifeld.com
rhahl@neifeld.com

Counsel for Pippin:

R. Danny Huntington, Esq.
William N. Hughet, Esq.
Rothwell, Figg, Ernst & Manbeck, PC
dhuntington@rothwellfigg.com
whughet@rothwellfigg.com